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# U. S. DEPARTMENT OF AGRICULTURE

FARMERS' BULLETIN No. 1519

Oct 1930

## RABBIT SKINS FOR FUR



**W**ITH THE DISAPPEARANCE of many of the fine-pelted wild fur bearers from certain parts of the United States, the use of rabbit skins is steadily increasing.

Aided by modern processes, American fur dressers and dyers have become so expert in changing the colors and appearance of furs that in many instances the pelt of the rabbit, under a variety of trade names, is replacing many that are more attractive and costly.

The fur coats imitating white ermine and leopard skin, shown on the title-page and in Figure 7, respectively, are made entirely from rabbit skins, except the trimmings.

Methods of handling rabbit skins, from the time the pelt is removed until it reaches the raw-fur market or is tanned for home use, are described in this bulletin.

# RABBIT SKINS FOR FUR

By D. MONROE GREEN, *Associate Biologist, Division of Fur Resources*  
*Bureau of Biological Survey*

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## EXTENT OF THE INDUSTRY

**R**ABBIT FUR is used more extensively by the fur trade than any other kind. More than 100,000,000 rabbit skins are utilized annually. Of this number, about 55,000,000, dressed and dyed, are made into fur garments and into trimmings for women's coats, suits, and dresses. The remainder, or skins not suitable for garments, are used as linings for men's and boys' gloves and in the manufacture of felt, used chiefly for making hats. In separating the fur for felting purposes, the skins are cut into fine shreds, but these are utilized in the manufacture of glue.

About 98 per cent of this enormous quantity of rabbit skins, valued at approximately \$25,000,000, is imported from Australia, New Zealand, Belgium, France, and other foreign countries. The United States at present produces less than 2 per cent of the number required to meet the demands of the American trade.

The quantity of rabbit skins used annually is steadily increasing. Many wild fur-bearing animals are disappearing from different parts of the United States, and rabbit fur is being substituted in the manufacture of garments previously made from more desirable skins. Rabbit fur lends itself readily to imitation processes, and American fur dressers and dyers have mastered so well the art of imitating other furs by modern methods of plucking, shearing, and dyeing that the pelt of the rabbit is being offered for sale under a variety of trade names and in many instances is replacing such costly and attractive skins as ermine, seal, beaver, and leopard.

## KINDS OF SKINS AND THEIR VALUE

Pelts of the wild cottontail rabbits found in abundance in the United States, and of the wild hares commonly called jack rabbits, are thin and poor in quality and of practically no use to the furrier. Every domestic rabbit skin, however, with the exception of those from

the Angora, has commercial fur value, regardless of size or color. Angora pelts have long silky wool instead of fur, and are worthless for furriers' purposes. The wool is used by some foreign concerns in making yarns and fabrics, but there is little demand for it in the United States. Angora skins shipped with other pelts to raw-fur buyers are invariably discarded or destroyed.

A large skin is more valuable than a small one and some colors bring better prices than others. The most important considerations, however, are the quality and texture of the fur and the care given the pelt after it has been removed from the carcass. Other things being equal, white, red, and blue skins, in the order named, are in greatest demand and sell more readily than others.

Pure-white skins are preferable for the reason that they can be dyed light, dark, or medium shades of any color demanded by the fur trade, and, with the exception of Chinchillas, they usually bring from 10 to 40 per cent more than other colors. Red and blue skins are dyed many of the more fashionable shades and often are used in their natural undyed state; but grays, browns, spotted, silvers, and most others are mixed together and dyed either black or a very dark color.

Chinchilla rabbit skins are used undyed, and as their color closely resembles that of the rare wild South American chinchilla, there is an increasing demand for them. They frequently sell for more than other rabbit pelts, but raw-fur buyers will not, so far as known, pay \$5 or more a skin as has been stated by some dealers and promoters having stock for disposal.

#### KILLING AND SKINNING

The easiest and most humane way of killing a rabbit is to dislocate its neck with the hands or to stun it with a blow behind the ears with a small, heavy stick, and then, with a sharp knife, to cut off the head or cut the throat at the jugular vein and let it bleed. In southern California, where rabbits are marketed by the thousands, the dislocation method is employed. With one hand the animal is held by the hind legs or the skin on the back and with the other the head is grasped firmly, and then with a pull and a quick upward snap of the head the neck is completely dislocated at the point where it joins the backbone.

The carcass is then hung by the right hind leg on a nail or hook inserted near the hock joint between the tendons and the bone of the leg. When it is thus suspended, the head is cut off to allow free bleeding in order that the meat may have a good color. The tail, the two forefeet, and the left hind foot are next cut off at the first joint. In this operation care should be taken to work the knife through the joints so as not to cut the tendons or let the flesh slip down on the leg, and not to splinter the bone, which would make a rough surface and detract from the appearance of the carcass.

The skin is then cut around the hock joint of the right hind leg and pulled downward. This loosened skin (fig. 1) is next cut open on the inside of the leg to the root of the tail, then up the inside of the other leg to the other hock joint. The skin of the hind leg is then taken in one hand, and with a sharp knife in the other the fat

is carefully cut away before starting to pull the pelt down over the carcass. Fat usually accumulates at the point where the hind legs join the body, and this should always be cut loose and left on the

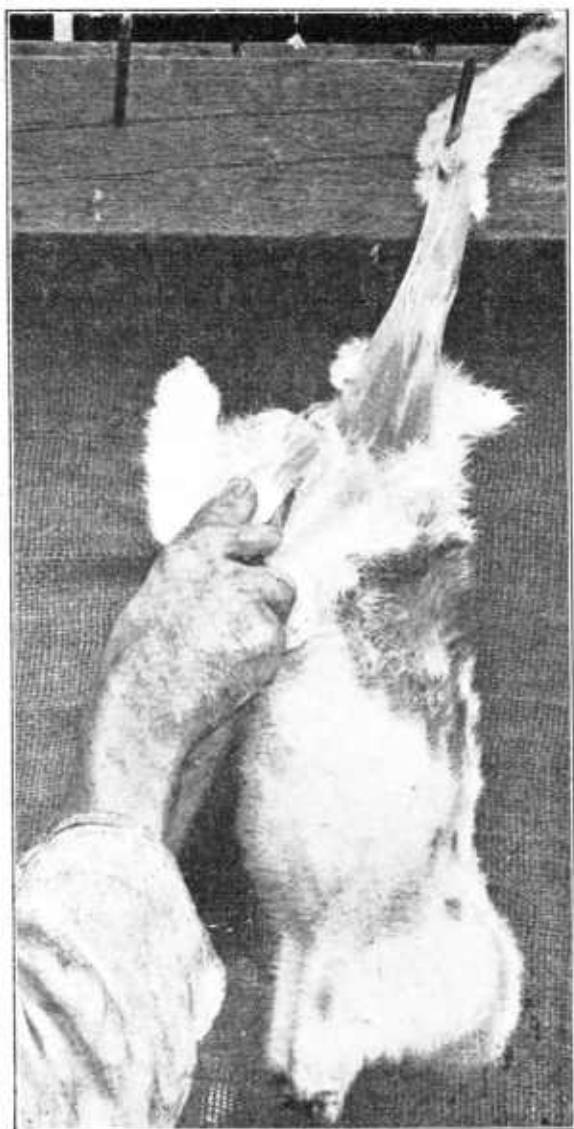


FIG. 1.—Removing the pelt. Cut the fat from the skin before starting to pull the pelt down over the carcass

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carcass, else it will stick to the skin and detract from its appearance and selling value. Fat left on the pelt makes drying difficult and sometimes causes "fat burns" (fig. 2).

The pelt is not cut open but is left cased, or whole, care being exercised not to cut or damage the skin in removing it. Even a small cut in a pelt lessens its sale value.

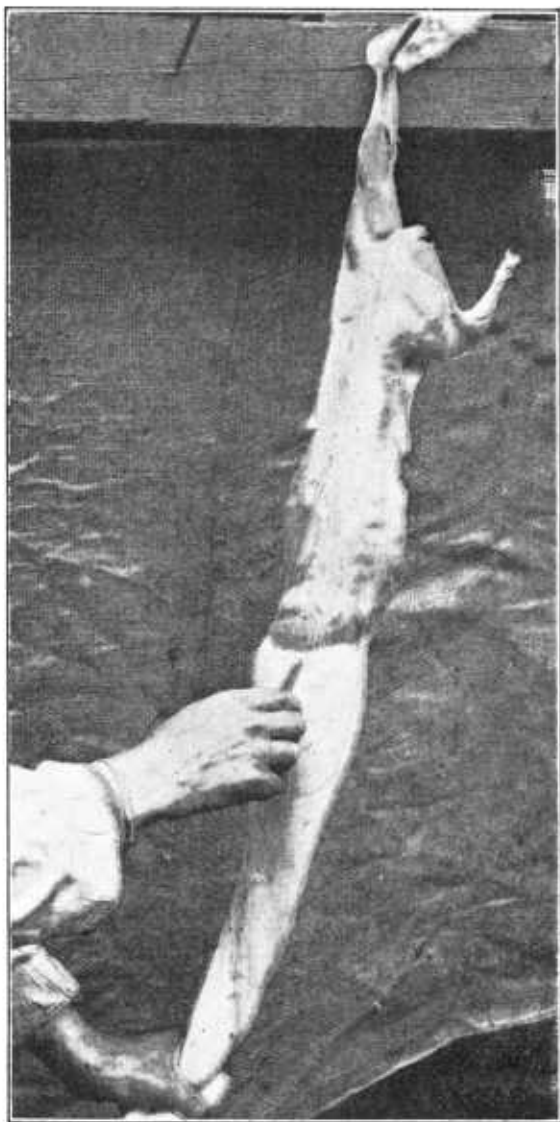


FIG. 2.—The skin is taken off whole, or cased, that is, not split down the belly. Care should be taken to cut all fat from the pelt as it is removed from the carcass.

#### STRETCHING SKINS

A rabbit skin should be well cared for after it has been removed from the carcass, for the finest pelt can be made worthless by in-

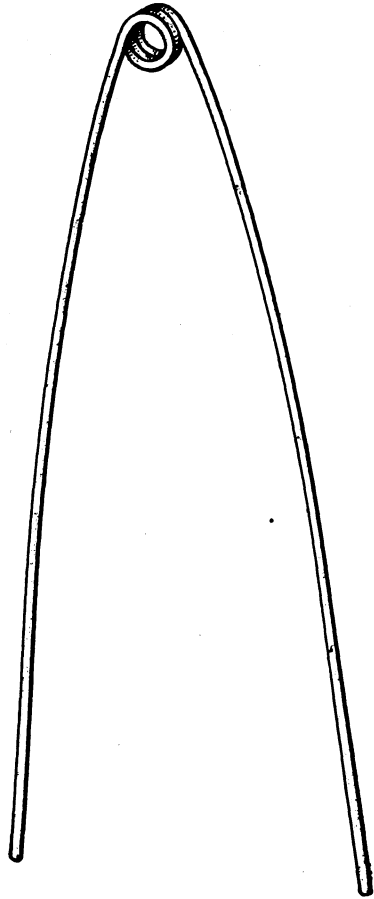
proper handling. It should be placed on a wire stretcher (fig. 3) immediately after it has been taken from the animal and while still warm. If allowed to lie and become cold the skin contracts and hardens and when dry will show wrinkles or creases. This lessens its sale value. The flesh side of the pelt should be kept out and the fur turned in.

The pelt should be placed on the stretcher so that the four legs are on one side and the back on the other, as shown in Figure 4. When stretched with the wire in the middle of the back, as shown in Figure 5, the wire sometimes injures the most valuable part of the fur. The loop of the stretcher should project through the opening at the top of the pelt. The stretcher should not be forced unnecessarily, as the spring in the wire will shape the skin properly. The pelt sometimes has a tendency to curl, but this can usually be prevented by dipping it in water before placing it on the stretcher.

After the skin is placed on the stretcher it should be carefully examined to see that all folds and wrinkles are smoothed out and that the bottom of the skin stretches and dries flat. It is important that the piece of neck skin, or dewlap, at the top be pulled up and the skin from the forelegs straightened out, so that these parts will not dry fast to the body of the pelt. It is well to inspect each pelt the second day and see that this is properly done.

#### HOMEMADE STRETCHERS

Wire stretchers like the one illustrated in Figure 3 are practicable and can be made easily at little expense. Starting at the middle of a piece of No. 9-gauge steel-spring wire, about 60 inches long, wrap both ends in opposite directions around a smooth 2-inch pipe or round piece of hardwood, forming a 3-coil spring. The ends should be brought down within about 14 inches of each other, so that the coil will have sufficient spring to stretch the skin properly. If desired, the wire can be cut a little longer and the ends turned up into loops, giving the stretcher a finished appearance.



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FIG. 3.—Homemade wire stretcher for shaping and drying rabbit pelts. A piece of No. 9-gauge wire 60 inches long will make a stretcher of the right size



## DRYING AND PRESERVING

To dry the skin, hang up the stretcher on which it is placed by the loop, in a dry, shady place, where the air is circulating. A moderately warm atmosphere is best but not essential. Never dry a pelt

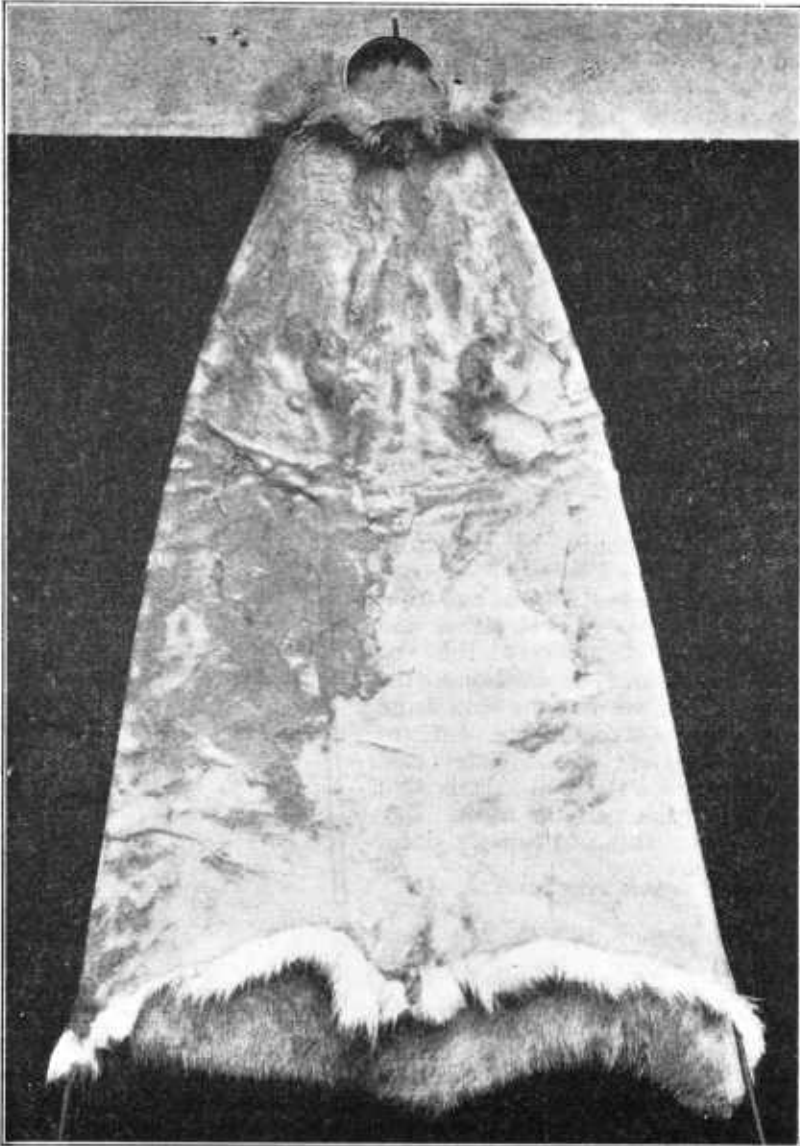


FIG. 4.—Right way of placing a rabbit pelt on the stretcher. All four legs should be on one side of the stretcher and the back of the pelt on the other

in the sun, as it is likely to be burned and its value destroyed. All pelts should be allowed to hang until they are thoroughly dry and until the fat, oily moisture on the skin side has disappeared, for pelts

shipped when too green are invariably worthless when they reach the furrier. Even a small number insufficiently dried and packed with others will sometimes ruin the entire lot.

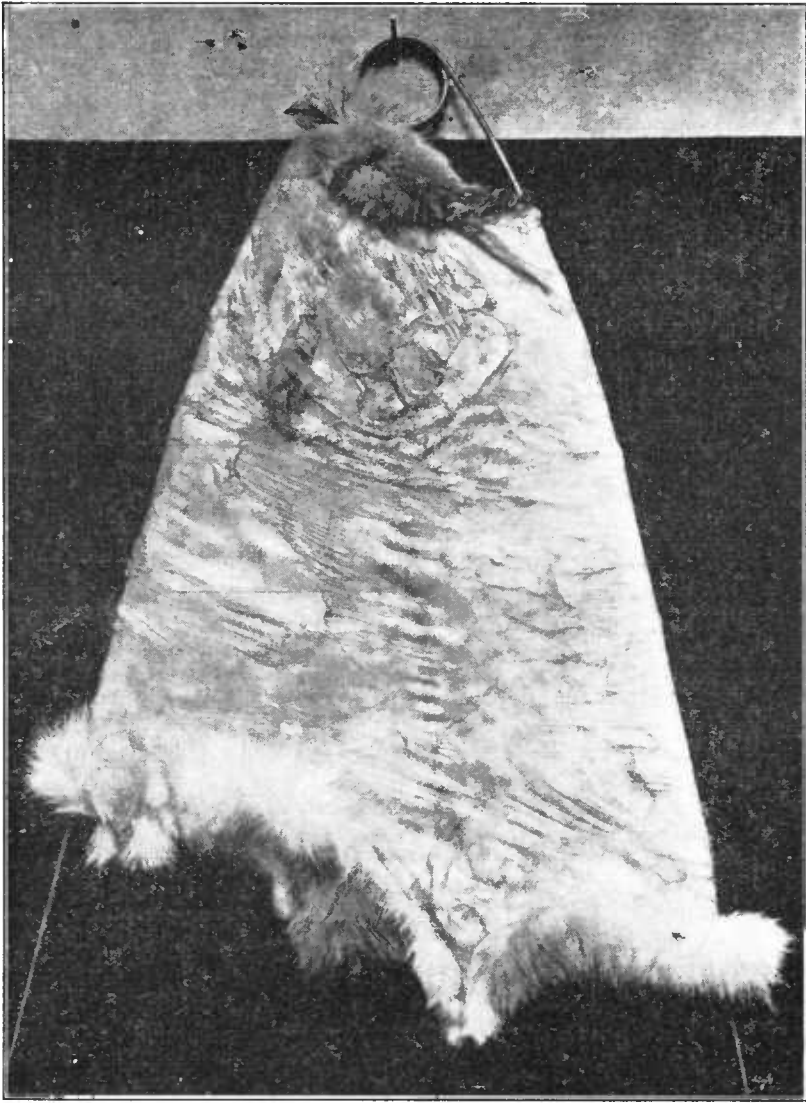


FIG. 5.—Wrong way to stretch a rabbit pelt. In this picture one side of the stretcher comes down the middle of the back and the other midway between the two front and the two hind legs. This pelt has not been smoothed out properly and is curled at the bottom.

Dried skins should never be placed in a pile, but instead should be kept in a dry, cool place until shipment is made. The best way to keep skins from spoiling during this time is to tie the top ends together in a bundle of 50 or less and hang them from a beam or post

away from rats, mice, or vermin. During the summer, or in a warm climate, the skins should be well sprinkled with flaked naphthalene or paradichlorobenzene and covered with paper. Skins should be disposed of promptly. When they must be kept any length of time it may be necessary to repeat the application of the naphthalene. No salt or other curing agent should ever be placed on rabbit skins, for when properly stretched and dried they do not require any other means of curing.

#### SORTING AND GRADING

If the best prices are to be obtained, rabbit skins must be carefully sorted and graded for quality, color, and size before being sold. No mixed shipments should be offered, for if good and poor skins of



FIG. 6.—Sorting and grading skins in a raw-fur receiving house. They are properly packed, baled, and marked for shipment

different sizes and colors are mixed, the entire shipment is usually accepted at the price paid for the poorer quality.

Raw-fur buyers usually grade rabbit skins as firsts, seconds, and thirds. Firsts and seconds are also divided into five classes, based on color: White, red, blue, Chinchilla, and mixed. Some furriers also grade firsts and seconds as large, medium, and small. The white, red, blue, and Chinchilla skins should always be packed and shipped separately, whereas skins of all other colors may be put together (fig. 6).

Firsts are prime pelts of large size, well shaped, and properly stretched and dried, having all the hair and underfur intact, and the skin side free from dark spots, streaks, or cuts of any kind. The

thicker and denser the underfur on a pelt, the more valuable it is and the better price it will bring.

Seconds are pelts with shorter hair and less underfur than firsts, and, except in white pelts, the skin usually shows dark spots or streaks, and sometimes large black splotches. The skin of a white pelt is white, even though the fur is poor. Seconds also include pelts that are improperly stretched and dried, that have rubbed in shipment, or that show the poor spots where the skin has been pierced or the hair is short or missing.

Thirds are pelts with short hair and thin underfur and those from animals taken too young or during the molting season, when the hair is missing in places and the quality and texture are poor. Pelts that are badly cut or otherwise mutilated and poorly stretched and dried also are classed as thirds. Thirds are of no value to the furrier and are used exclusively in the manufacture of felt for hats.

#### MARKETING

The raw-fur industry of America is centered in New York City. Practically all the rabbit skins imported from foreign countries or produced and sold in the United States eventually reach this great marketing center. There is always a demand for good pelts, if they can be supplied in large quantities; but, as the expense of handling is almost as much for a small as for a large number, raw-fur buyers do not care to purchase pelts in small lots. Some buyers will accept a few hundred pelts at one time, but the majority prefer to purchase in lots of from 25,000 to 100,000. This fact has made it difficult for most American breeders, who keep only a limited number of animals, to market their skins to advantage. They have consequently been obliged to sell in small quantities at almost any price offered, or to hold skins until the necessary large shipments can be accumulated, a delay, which for lack of proper facilities, is usually inconvenient or impracticable.

Scattered over widely separated areas, and in most instances unfamiliar with the demands of the fur trade, breeders have made little effort to sort and grade their skins or to combine their shipments in order that larger quantities might be offered at one time and better returns realized. Some individual buyers or middlemen, however, have taken advantage of the situation by purchasing skins direct from breeders at very low prices and selling them in larger quantities at a good profit to themselves.

Through the cooperative effort of rabbit breeders and raw-fur buyers, a rabbit breeders' exchange was for a time operated in New York for the benefit of producers throughout the country. It would be desirable if similar cooperative exchanges were established in several of the large cities in various parts of the country. Here producers from all sections could ship skins in any number and have them properly sorted and graded for quality, color, and size, and sold in quantities to raw-fur buyers or manufacturers at greater profit to the producer. The skins should be handled on a commission basis, the charges covering only cost of sorting, grading, and transportation, and a small fee for selling and handling. The advantages of this method of selling would be that the skins could be placed in lots of uniform types, giving them higher values for manufacture.

## PACKING AND SHIPPING

To avoid spoilage or damage in transit, great care should be taken in packing skins for shipment. Never turn the skin. Always leave the fur inside and so far as possible keep skins in the same shape as when removed from the stretcher. Examine each one carefully and make sure that it is properly dried. Do not pack or ship a moist pelt or one that has patches of oily fat on it.

Pelts that have been examined and are ready for shipment should be laid out flat, one overlapping the other, and made up into bales. Every two or three layers of skins, as they are being packed together, should be sprinkled with flaked naphthalene or paradichlorobenzene to keep out the insects that often damage the pelts in transit. When a bale has been finished it should be wrapped in paper and covered with burlap, sewed with strong cord or binder twine, and properly marked. Skins should never be shipped unless well protected in this manner.

## TANNING

The tanning of rabbit skins by persons who are inexperienced or who lack proper equipment generally results in disappointment, both in the appearance and in the quality of the product. To tan a pelt properly requires experience and practice, and some of the operations are so highly specialized that they can not be undertaken by an amateur. Rabbit skins to be sold should not be tanned before shipment, for fur buyers prefer to purchase them in the raw state. If intended for home use, however, they may be tanned by the methods herein described, but it should not be expected that they will compare favorably in appearance and pliability with the product of a tannery or factory operated by experienced workmen and equipped with modern machinery.

The first step in tanning is to get the skin thoroughly softened, clean, and free from flesh and grease. If the skin is cased, or whole, split it down the middle of the belly and then soak it in several changes of clean, cool water. When it becomes soft, lay it over a pole or board and begin working over the skin side with a coarse file or dull knife to break up and remove the adhering tissues, flesh, and fat. At the same time, the grease and oil must be worked out of the skin, as it is useless to start tanning until all the tissues, fat, and grease have been removed and the skin has been made uniformly soft and pliable.

The length of time a skin must be soaked depends upon the thickness and the condition of the pelt, some skins requiring two or three hours and others longer. A skin should be soaked until it is soft, but it should not remain wet longer than is necessary, as the hair may start to slip. When the skin has been thus treated and is somewhat softened, work it in lukewarm water containing 1 ounce of soda or borax to the gallon. Soap added to the water is also helpful in cutting the grease and softening and cleansing the skin. Rinse thoroughly in lukewarm water. Squeeze out the water, but do not wring; then work the skin in gasoline, which should remove the last particles of dirt and grease. It is then ready for tanning.

There are several methods of tanning rabbit skins, but two of the more successful are known as the salt-acid process and the salt-alum process.<sup>1</sup>

#### SALT-ACID PROCESS

The salt-acid formula calls for a solution made up of 1 pound of common salt and one-half ounce of concentrated sulphuric acid to each gallon of water. Dissolve the salt and carefully pour in the acid while stirring. This tanning liquor should be made and used in glass or earthen jars or wooden vessels; never in metal containers of any kind. When pouring in the acid, do not inhale any more of the fumes given off than necessary, and be careful also not to get any of the strong acid on the skin or clothing. As soon as the salt-acid solution has cooled, it is ready for use.

Put the cleaned, softened skin in the solution so that it is entirely covered. After one to three days, during which it is stirred frequently, remove and rinse it in clean cool water. The skin should then be worked for about 10 minutes in a solution of 1 ounce of borax to 1 gallon of water. Rinse again in clean water and squeeze (but do not wring) as dry as possible. Work the skin a few minutes in the hands by rubbing and pulling, then tack it out flat, flesh side up, and apply a thin coating of grease or oil and let it dry. Fresh butter, neat's-foot oil, or olive oil are good for this purpose.

When the pelt is nearly dry but still damp, begin to work it with the hands, stretching it in all directions and working the flesh side over the edge of a board and pulling it back and forth as if shining shoes with a cloth. If the skin is rough it may be smoothed by working it over a sandpaper block, which also helps to make it soft and more pliable. Much of the success in producing a soft, pliable skin depends upon this repeated working, which must be done while the skin is drying out and not after it is dry.

If the skin is not soft enough when dry it should be dampened and worked again as before. If still greasy it may be given a hasty bath in gasoline. A final cleaning by working in warm, dry, hardwood sawdust is beneficial and will add to the luster of the fur.

#### SALT-ALUM PROCESS

The salt-alum formula calls for 1 pound of ammonia alum (ammonium aluminum sulphate) or potash alum (potassium aluminum sulphate) dissolved in 1 gallon of water; 4 ounces of washing soda (crystallized sodium carbonate) and 8 ounces of common salt dissolved together in one-half gallon of water. When dissolved, pour the soda-salt solution very slowly into the alum solution while stirring vigorously. Mix the combined solution as used with sufficient flour to make a thin paste, the flour being first mixed with a little water to prevent lumps.

The skin, cleaned and softened as previously described, should be tacked out smoothly, flesh side up, on a board and then coated about

<sup>1</sup> For a comprehensive treatment of tanning, see Farmers' Bulletin 1334, "Home Tanning of Leather and Small Fur Skins."

an eighth of an inch thick with the tanning paste and covered lightly with paper or sacking laid so that it does not come in close contact

with the paste. The next day scrape off most of the paste and give another coating, and at intervals of a day repeat the application two or three times, depending upon the thickness of the skin. Only thick skins from mature bucks will need as many as three applications. Leave the last coating on for three or four days. Finally scrape off the paste and work the skin in borax water, and rinse, squeeze, and then stretch and work over a board in exactly the manner described for the salt-acid process.

The salt-alum process is widely used and is considered slightly better than the salt-acid tannage, although alum-tanned skins often come out stiff and hard and require much working to make them soft and pliable.

#### TRADE NAMES FOR RABBIT FUR

Rabbits and hares are two distinct groups, but the pelts of both are used in the fur trade. Rabbits, other than cottontails, are bred extensively in the United States, France, Belgium, England, and other countries, and are found also in a wild state in marketable numbers in Australia and New Zealand. The pelt is strong and the fur thick, fine, and silky. Most hares are larger than rabbits but the pelts are weak and the fur, which is rather long, is brittle and not very durable. The pelts are plucked, sheared, and dyed in imitation of more rare and costly furs, and are so scientifically treated by the fur-dyeing houses that it is often difficult to tell the genuine from the imitation (fig. 7).



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FIG. 7.—Attractive fur coat made entirely (except the trimmings) of rabbit skins dyed and marked to imitate leopard

that it is often difficult to tell the genuine from the imitation (fig. 7).

Following are some of the trade names applied to rabbit and hare pelts after they have been prepared for manufacturing purposes:

ARCTIC SEAL—Seal-dyed rabbit.	FRENCH BEAVER—Beaver-dyed rabbit.
AUSTRALIAN SEAL—Sheared and seal-dyed Australian rabbit.	FRENCH CHINCHILLA—Chinchilla-dyed hare.
BALTIC BLACK FOX—Black-dyed rabbit.	FRENCH CONY—Sheared white rabbit.
BALTIC BROWN FOX—Brown-dyed hare.	FRENCH LEOPARD—Hare dyed and marked to resemble leopard.
BALTIC LEOPARD—Australian rabbit dyed and marked to resemble leopard.	FRENCH SABLE—Sable-dyed rabbit.
BALTIC LION—Australian rabbit in natural color.	FRENCH SEAL—Sheared and seal-dyed rabbit.
BALTIC RED FOX—Natural red Australian rabbit.	IMITATION ERMINE—White rabbit.
BALTIC SEAL—Seal-dyed rabbit.	MENDOZA BEAVER—Sheared and beaver-dyed rabbit.
BALTIC TIGER—Australian rabbit dyed and marked to imitate tiger.	MESKIN BEAVER—Sheared and beaver-dyed rabbit.
BALTIC WHITE FOX—Natural white rabbit or natural white hare.	MESKIN ERMINE—White rabbit.
BAY SEAL—Seal-dyed rabbit.	MESKIN MOLINE—Mole-dyed rabbit.
BEAVERETTE—Beaver-dyed rabbit.	MESKIN SEAL—Sheared and seal-dyed rabbit.
BELGIAN BEAVER—Beaver-dyed rabbit.	MINKONY—Mink-dyed rabbit.
BLACK HARE—Black-dyed hare.	MOLIN—Mole-dyed rabbit, sheared.
BLUERETTE—Blue-dyed rabbit.	MOLINE—Mole-dyed rabbit.
CASTORETTE—Beaver-dyed rabbit.	MUSKRATINE—Sheared and seal-dyed rabbit.
CHAPCHILLAS—Sheared and chinchilla-dyed white hare.	NEAR SEAL—Sheared and seal-dyed rabbit.
CHINCHELLETT—Chinchilla-dyed rabbit.	NORTHERN SEAL—Sheared and seal-dyed rabbit.
COAST SEAL—Sheared and seal-dyed rabbit.	NUTRIETTE—Rabbit sheared and dyed to imitate nutria.
CONY—Another name for rabbit, particularly those from Europe.	POLAR SEAL—Seal-dyed rabbit.
CONY LEOPARD—Rabbit dyed and marked to imitate leopard.	RED RIVER SEAL—Seal-dyed rabbit.
CONY MOLE—Sheared and mole-dyed rabbit.	ROMAN SEAL—Seal-dyed rabbit.
ELECTRIC BEAVER—Beaver-dyed rabbit.	RUSSIAN LEOPARD—Rabbit dyed and marked to imitate leopard.
ELECTRIC MOLE—Mole-dyed rabbit.	SABLE HAIR—Sable-dyed hare.
ELECTRIC SEAL—Seal-dyed rabbit.	SEALETTE—Seal-dyed rabbit.
ERMILINE—White rabbit.	SEALINE—Sheared and seal-dyed Australian rabbit.
ERMINETTE—White rabbit.	SQUIRRELETTE—Squirrel-dyed rabbit.
FOX HAIR—Fox-dyed hare.	SQUIBBELINE—Squirrel-dyed rabbit.
	VISONETTE—Mink-dyed rabbit.



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